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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
09/478,812	01/07/00	SUGANO	Y	SON-1718

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EXAMINER	
LEE, E	
ART UNIT	**PAPER NUMBER**
2815	

DATE MAILED: 06/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/478,812	SUGANO ET AL.	
	Examiner	Art Unit	
	Eugene Lee	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2000* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,12,17,18,27,28,39,40,53,54,63,65,73 and 74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,12,17,18,27,28,39,40,53,54,63,65,73 and 74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 11, 39, 53, 63, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. '291. Zhang discloses a thin film semiconductor device comprising a polycrystalline silicon film with "relatively large particle diameter" and characteristics that are made uniform. See, for example, column 3, line 67.

a. Zhang does not explicitly state the parts of the thin film semiconductor device (i.e. gate insulating film, gate electrode, etc.), however, these parts are conventionally found in thin film transistors. See the ***Prior Art*** cited below, for an example.

b. Also, see ***Product by Process Limitations*** below.

c. Regarding the thickness of the film, Zhang discloses the claimed invention except for semiconductor thin film being a 30 to 80 nm layer. It would have been an obvious matter of design choice to have a 30 to 80 nm layer, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

3. Claims 12, 18, 28, 40, 54, 65, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. '291 as applied to claims 11, 39, 53, 63, and 73 above, and further in view of Tanaka et al. '744. Zhang does not disclose the thin film transistor as part of a display device comprising a pair of substrates adhered with an electrooptical substance and a presence of counter, pixel electrodes, etc. However, it was well known in the art at the time of invention that thin film transistors are integral to display or LCD devices (for example, see abstract and column 1, lines 8-17 of Tanaka). Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to use the TFT polycrystalline films of Zhang's invention in the thin film transistors found in, for example, Tanaka's display devices since thin film transistors are conventionally used in display devices.

a. Note, for example, in FIG. 3, Tanaka shows a display device with the two substrates 12, 10, liquid crystal 200, counter electrodes 170r, 170g, pixel electrodes 150 and thin film transistor 101. These components are conventionally found in LCD display devices.

b. Claim 18 discloses the claimed invention except for the plural units. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to duplicate the units since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. In re Japikse, 86 USPQ 70.

c. Claim 28 discloses the claimed invention except for "said semiconductor thin films are accumulated." It would have been obvious to one having ordinary skill in the art at the time of the invention was made to duplicate and accumulate the

semiconductor thin films since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. In re Japikse, 86 USPQ 70.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. '291. Claim 17 discloses the claimed invention except for the plural units. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to duplicate the units (and form more than one polycrystalline unit) since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. In re Japikse, 86 USPQ 70.

5. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. '291. Claim 27 discloses the claimed invention except for "said semiconductor thin films are accumulated." It would have been obvious to one having ordinary skill in the art at the time of the invention was made to duplicate and accumulate the semiconductor thin films since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Prior Art

6. The prior art of made of record and not relied upon is considered pertinent to applicant's disclosure. See, for example, Zhang et al. '244 (in FIG. 4) where it shows the gate oxide, gate electrode and semiconductor thin film, parts of which are all conventional to a thin film transistor.

Product-by-Process Limitations

While not objectionable, the Office reminds Applicant that "product by process" limitations in claims drawn to structure are directed to the product, per se, no matter how actually made. *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wethheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al.*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or otherwise. Note that applicant has the burden of proof in such cases, as the above case law makes clear. Thus, no patentable weight will be given to those process steps which do not add structural limitations to the final product.

All the claims recite limitations that do not offer any *structural* variation to the ***final*** product. Therefore, any language, such as "formed by forming ..... irradiating ..... with an energy beam" and "irradiate said region at a time by a single shot irradiation" in claim 11, for example, are given no patentable weight. The language here only recites methods of forming the final product (either a thin film semiconductor device or display device). Therefore, the only limitations that the Office finds patentable are limitations that are part of a ***final structure***, regardless of any methods or intermediate structures that are present and recited in the claims.

Response to Arguments

7. Applicant's arguments with respect to claims 11, 12, 17, 18, 27, 28, 39, 40, 53, 54, 63, 65, 73 and 74 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee
June 19, 2001

EDDIE LEE
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